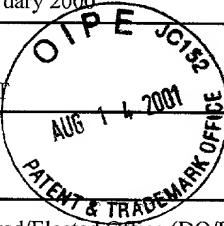
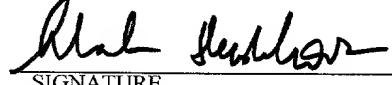


Form PTO-1390		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTORNEY'S DOCKET NUMBER <i>P21328</i>
TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. 371		U.S. APPLICATION NO. (If known, see 37 CFR 1.5) 09/913346	
INTERNATIONAL APPLICATION NO. PCT/FR00/00374	INTERNATIONAL FILING DATE 15 February 2000	PRIORITY DATE CLAIMED 15 February 1999	
TITLE OF INVENTION BITUMINOUS UPPER LAYER DRAINING BLANKET			
APPLICANT(S) FOR DO/EO/US Jean-Paul MICHAUT			
<p>Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information.</p> <ol style="list-style-type: none"> <input checked="" type="checkbox"/> This is a FIRST submission of items concerning a filing under 35 U.S.C. 371. <input type="checkbox"/> This is a SECOND or SUBSEQUENT submission of items concerning a filing under 35 U.S.C. 371. <input checked="" type="checkbox"/> This is an express request to promptly begin national examination procedures (35 U.S.C. 371(f)). <input checked="" type="checkbox"/> The US has been elected by the expiration of 19 months from the priority date (PCT Article 31). <input checked="" type="checkbox"/> A copy of the International Application as filed (35 U.S.C. 371(c)(2)) <ol style="list-style-type: none"> <input checked="" type="checkbox"/> is attached hereto (required only if not communicated by the International Bureau). <input type="checkbox"/> has been communicated by the International Bureau. <input type="checkbox"/> is not required, as the application was filed in the United States Receiving Office (RO/US). <input checked="" type="checkbox"/> An English language translation of the International Application as filed (35 U.S.C. 371 (c)(2)). <input checked="" type="checkbox"/> Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3)) <ol style="list-style-type: none"> <input type="checkbox"/> are attached hereto (required only if not communicated by the International Bureau). <input type="checkbox"/> have been communicated by the International Bureau. <input type="checkbox"/> have not been made; however, the time limit for making such amendments has NOT expired. <input type="checkbox"/> have not been made and will not be made. <input checked="" type="checkbox"/> An English language translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)) <input checked="" type="checkbox"/> An oath or declaration of the inventor(s) (35 U.S.C. .371(c)(4)). "Unexecuted" <input checked="" type="checkbox"/> An English language translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (U.S.C. 371(c)(5)). <p>Items 11 to 16 below concern other document(s) or information included:</p> <ol style="list-style-type: none"> 11. Assignee: <u>COLAS of Cedex, FRANCE</u> 12. <input type="checkbox"/> An Information Disclosure Statement under 37 CFR 1.97 and 1.98. 13. <input type="checkbox"/> An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included. 14. <input checked="" type="checkbox"/> A FIRST preliminary amendment. <input type="checkbox"/> A SECOND or SUBSEQUENT preliminary amendment. 15. <input type="checkbox"/> A substitute specification. 16. <input type="checkbox"/> A change of power of attorney and/or address letter. 17. <input type="checkbox"/> Figure of Drawing to be published _____ 18. <input checked="" type="checkbox"/> Other items or information: Cover Sheet and International Application as published in French. PCT/IPEA/416(in French). PCT/IPEA/409(in French). PCT/IB/304(in French). PCT/IB/308(in French). PCT/ISA/210(in French and English). Cover Letter under 35 USC 371 and 1.495. Claim of Priority. 			



U.S. APPLICATION NO. (If known, see 37 CFR 1.5) 09/913346	INTERNATIONAL APPLICATION NO. PCT/FR00/00374	ATTORNEY'S DOCKET NUMBER P21238		
19. <input type="checkbox"/> The following fees are submitted:		<input type="checkbox"/> CALCULATIONS <input type="checkbox"/> PTO USE ONLY		
Basic National Fee (37 CFR 1.492(a)(1)-(5)): Search report has been prepared by the EPO or JPO. \$ 860.00 International preliminary examination fee paid to USPTO (37 CFR 1.482). \$ 690.00 No international preliminary examination fee paid to USPTO (37 CFR 1.482) but international search fee paid to USPTO (37 CFR 1.445(a)(2)). \$ 710.00 Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO. \$1,000.00 International preliminary examination fee paid to USPTO (37 CFR 1.482) and all claims satisfied provisions of PCT Article 33(2)-(4). \$ 100.00				
ENTER APPROPRIATE BASIC FEE AMOUNT =		\$860.00		
Surcharge of \$130.00 for furnishing the oath or declaration later than <u>20</u> <u>30</u> months from the earliest claimed priority date (37 CFR 1.492(e)).		\$		
Claims	Number Filed	Number Extra	RATE	
Total Claims	9	- 20 =	0	X \$18.00 \$0.00
Independent Claims	1	- 3 =	0	X \$80.00 \$0.00
Multiple dependent claim(s) (if applicable)			+ \$270.00	\$0.00
TOTAL OF ABOVE CALCULATIONS =		\$860.00		
<input type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27. The fees indicated above are reduced by $\frac{1}{2}$.		\$		
SUBTOTAL =		\$860.00		
Processing fee of \$130.00 for furnishing the English translation later than <u>20</u> <u>30</u> months from the earliest claimed priority date (37 CFR 1.492(f)).		+		
Extension of Time fee in the amount of \$				
TOTAL NATIONAL FEE =		\$860.00		
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property		+		
TOTAL FEES ENCLOSED =		\$860.00		
		Amount to be refunded	\$	
		Charged	\$	
a. <input checked="" type="checkbox"/> A check in the amount of \$860.00 to cover the above fees is enclosed. b. <input type="checkbox"/> Please charge my Deposit Account No. _____ in the amount of \$_____ to cover the above fees. c. <input checked="" type="checkbox"/> The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. <u>19-0089</u> .				
NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.				
SEND ALL CORRESPONDENCE TO CUSTOMER NO. 7055 AT THE PRESENT ADDRESS OF: Neil F. Greenblum GREENBLUM & BERNSTEIN, P.L.C. 1941 Roland Clarke Place Reston, VA 20191 (703) 716-1191				
 07055 <small>PATENT TRADEMARK OFFICE</small>		 SIGNATURE Neil F. Greenblum NAME #45,294 28,394 REGISTRATION NUMBER		

P21328.A01

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Jean-Paul MICHAUT

Group Art Unit: Unknown

Serial No : U.S. National Phase of PCT/FR00/00374

Examiner: Unknown

Filed : I.A. Filed February 15, 2000

For : BITUMINOUS UPPER LAYER DRAINING BLANKET

PRELIMINARY AMENDMENT

Commissioner of Patents and Trademarks

Washington, DC 20231

Sir :

IN THE SPECIFICATION

Please insert an Abstract of the disclosure as appended at the end of this Amendment and labeled Appendix 1.

IN THE CLAIMS

Please amend claims 3-9 as follows (for the Examiner's convenience, a clean copy of all pending claims is being reproduced below, with amended claims 3-9 being so labeled, and a marked-up version of the amended claims being submitted in Appendix 2 attached at the end of this Amendment):

1. A bituminous upper layer draining blanket comprising two partially superposed layers whereof the upper layer contains aggregate with low particle-size distribution and a modified bituminous binder, and whereof the lower layer contains aggregate with high

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particle-size distribution and a bituminous binder, characterised in that the upper partial layer comprises an added filler material between 2 and 11% in weight.

2. A layer according to claim 1, characterised in that the aggregate size distribution ratio of both partial layers is approx. 3:1 to 4:1.

3. (Amended) A layer according to claim 1, characterised in that the aggregate size distribution of the upper partial layer is selected among the 2/4, 4/6 and 6/10 ranges.

4. (Amended) A layer according to claim 1, characterised in that the aggregate size distribution of the lower partial layer is selected among the 10/14, 10/20 and 14/20 ranges.

5. (Amended) A layer according to claim 1, characterised in that both upper and lower partial layers have approximately the same void ratio.

6. (Amended) A layer according to claim 1, characterised in that both upper and lower partial layers have approximately the same void ratio and in that the average volume of the voids of the upper partial layer is smaller than the average volume of the

voids of the lower partial layer.

7. (Amended) A carriageway comprising a draining bituminous upper layer blanket, characterised in that the upper layer blanket complies with claim 1.

8. (Amended) A method of realisation of a draining bituminous upper layer blanket according to claim 1, characterised in that the upper and lower partial layers are applied in a single pass by a road finishing machine.

9. (Amended) A method of realisation of a draining bituminous upper layer blanket according to claim 1, characterised in that the upper and lower partial layers are applied in two successive passes by a road finishing machine.

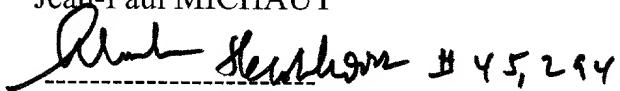
REMARKS

Upon entry of the above amendment, claims 1-9 will remain pending, with claim 1 being in independent form. This Amendment is being filed simply to remove multiple dependency of claims.

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While a fee is not required, the Commissioner is hereby authorized to charge any required fees or refund excess payments to our Deposit Account No.19-0089.

Respectfully submitted,
Jean-Paul MICHAUT



45,294

Neil F. Greenblum
Reg. No. 28,394

August 14, 2001

GREENBLUM & BERNSTEIN, P.L.C.

1941 Roland Clarke Place

Reston, VA 20191

(703) 716-1191

Enclosures: Appendix 1
Appendix 2

FBI - WASH D C - 650

APPENDIX 2

3. (Amended) A layer according to claim 1 [or 2], characterised in that the aggregate size distribution of the upper partial layer is selected among the 2/4, 4/6 and 6/10 ranges.

4. (Amended) A layer according to claim 1 [one of the claims 1 to 3], characterised in that the aggregate size distribution of the lower partial layer is selected among the 10/14, 10/20 and 14/20 ranges.

5. (Amended) A layer according to claim 1 [one of the claims 1 to 4], characterised in that both upper and lower partial layers have approximately the same void ratio.

6. (Amended) A layer according to claim 1 [one of the claims 1 to 4], characterised in that both upper and lower partial layers have approximately the same void ratio and in that the average volume of the voids of the upper partial layer is smaller than the average volume of the voids of the lower partial layer.

7. (Amended) A carriageway comprising a draining bituminous upper layer blanket, characterised in that the upper layer blanket complies with claim 1 [any of the claims 1 to 6].

8. (Amended) A method of realisation of a draining bituminous upper layer blanket according to claim 1 [any of the claims 1 to 6], characterised in that the upper and lower partial layers are applied in a single pass by a road finishing machine.

9. (Amended) A method of realisation of a draining bituminous upper layer blanket according to claim 1 [any of the claims 1 to 6], characterised in that the upper and lower partial layers are applied in two successive passes by a road finishing machine.

Bituminous upper layer draining blanket

The invention relates to a bituminous upper layer draining blanket, a method of realisation of such an upper layer blanket, as well as a carriageway comprising such an upper layer blanket.

The bituminous upper layer draining blanket, subject matter of this invention, is intended for the realisation of surface layers of stresses carriageways exposed to:

- wheel rutting,
- pollution,
- high traffic level.

Indeed, an upper layer draining blanket, in its current design, is composed of a layer of granular materials coated with a bituminous binder and applied to the required thickness.

The percentage of voids and the shape of the voids are such that rainwater may circulate in the communicating voids once this layer has been applied.

This layer is usually applied using a hooking layer onto a sub base layer when building a new carriageway or onto a surface layer in the case of maintenance. The hooking layer makes the underlying layer watertight, if the said is not already watertight intrinsically, while ensuring perfect bonding between both layers. This perfect bonding confers on both these layers a behaviour that is similar to that of a single layer.

The bituminous draining concrete layers are:

- standardised by the standard NF P 98.134 as having:
 - a voids content in the order of 20%, and
 - a percolation rate measured at the building site drainometer (NF P 98-254-3) greater than 0.4 cm/s and
- characterised in the engineering notices regarding carriageways made of special draining coated materials for company products as having
 - a voids content ranging between 20 and 25%, and

- a percolation rate measured at the building site drainometer (NF P 98-254-3) ranging between 0.8 cm/s and 1.3 cm/s.

Under the effect of the traffic, the drainage function in the bulk of this type of upper layer blanket decreases with time as a function of the ageing of the carriageway, in a variable fashion according to the product. Indeed, surface pollution is caused by rainwater in the bulk of the coated material.

The floating effect, created by the tyres, that is added to the gravitational movement of rainwater in the aggregate, repels the various polluting particles only partially.

These polluting particles are deposited, silt up and negate the draining function in the aggregate of these draining coated layers.

Surface drainability, for its own part, remains good.

The purpose of the invention is to remedy the shortcomings mentioned above and to prevent, at least, any deterioration of the draining function in the aggregate. Advantageously, the invention should enable to improve the adherence as well as to reduce the sound nuisances generated by this type of coated materials. This target must be reached under good economic conditions.

The purpose of the invention is satisfied by creating a granular differential and while promoting the horizontal and vertical draining functions in the aggregate of the coated material thanks to a suitable granular structure. This target is met under good economic conditions by using for a portion of the upper layer blanket, a modified bitumen that encloses a high proportion of road quality bitumen.

Thus, the invention relates to a bituminous upper layer draining blanket composed of two sections or partial layers, which share the improvement of the specific functions of the new upper layer blanket, i.e. improvement of the surface characteristics and improvement of the drainage and anti-rutting property.

The bituminous upper layer draining blanket comprises two partially superposed layers whereof the upper layer contains aggregate with low particle-size distribution and a modified bituminous binder, and whereof the lower layer contains aggregate with high particle-size distribution and a bituminous binder.

The partial layers are made of or treated with bituminous binders, that can be elastomer or not.

5 The materials and the binders are determined in relation to:

- the type of climate
- the altitude
- the stress level.

10 The invention also takes into account:

- the risk of wheel rutting,
- the risk of cracking by thermal shock,
- the risk associated with the slow speed of heavy vehicles and their channelled traffic,
- the risks associated with particular zones:
(small radius curves, braking zones, parking zones, ramps).

15 The partial layers of the upper layer blanket are formulated so that the resultant upper layer blanket:

- is not, or little, exposed to wheel rutting,
- generates little noise,
- promotes increased microroughness in surface while preserving original macroroughness of conventional draining coated materials,
- improves significantly by its assembly the lifetime of the draining capacity of the coated materials with time.

20 To this end, the invention also concerns the characteristics below, considered individually or in all their technically possible combinations:

25 The aggregate size distribution ratio of both partial layers is approx. 3:1 to 4:1.

The aggregate size distribution of the upper partial layer is selected among the 2/4, 4/6 and 6/10 ranges.

The aggregate size distribution of the lower partial layer is selected among the 10/14, 10/20 and 14/20 ranges.

30 The aggregate is of monogranular type without any fines in the upper partial layer.

The aggregate is of monogranular type without any fines in the lower partial layer.

The term 'monogranular' signifies the use of a single granular class for the preparation of the material respectively of the upper or lower partial layer.

5 The voids content of the lower partial layer of the upper layer blanket is equal to or greater than 25%.

The percolation rate measured at the building site drainometer (NF P 98-254-3) on the upper layer blanket is equal to or greater than 3.2 cm/s.

10 The Hsv roughness of the upper partial layer is equal to or greater than 0.80 mm (NF P 98-216-1).

The sound attenuation of the traffic noise associated with the complex of the upper layer blanket (NF S 31-119) is equal to or greater than 3 dBA.

15 Either or both of the lower and upper partial layers may comprise mineral or organic additives. These additives may be for instance rock or glass fibres or waste aggregate. They are injected during the manufacture of the material in order to form the corresponding partial layer.

20 The modified bitumen used for the realisation of at least one of the partial layers contains at least one elastomer or polymer and a very high proportion of road quality bitumens, i.e. at least a bitumen having a significant percentage of asphaltenes. The use of such a modified bitumen enables to improve the characteristics of the products obtained and to meet the purpose of the invention under very good economic conditions.

25 The modified bitumen, which is advantageously used for the realisation of either, or possibly both, partial layers, is obtained in two steps whereby during the first step, a homogeneous dispersion is prepared with elastomer and bitumen selected with a low percentage in saturated products and in asphaltenes, and during the second step the dispersion is diluted with a road quality bitumen. The preferred elastomer is a styrene-butadiene-styrene based elastomer, advantageously of linear type. And the bitumen selected contains less than 6% of saturated products and less than 7% of asphaltenes and has a colloidal instability index ranging between 0.2 and 0.6. The modified bitumen

comprises, in weight, at least 30%, advantageously more than 50%, road quality bitumen and at least 3% elastomer.

According to various embodiments, the modified bitumen has any of the following characteristics, considered individually or in combination:

- 5 - a penetration at 25°C ranging between 40 and 200 1/10 mm, preferably between 40 and 80 1/10 mm and, according to a particular choice, 62 1/10 mm;
- 10 - a ball-ring temperature greater than 60°C, preferably above 85°C and, according to a particular choice, 95°C;
- 15 - elastic recall at 10°C greater than 90% and, according to particular choice, 97%;
- 20 - cohesion at 35°C greater than 2 J/cm² and, according to a particular choice, 2.55 J/cm²;
- 25 - cohesion at 40°C greater than 1.5 J/cm² and, according to a particular choice, 1.83 J/cm².

The formulation of the upper layer and that of the lower layer are selected so that the respective size distribution curves are continuous and that the partial layers exhibit a high void ratio, whereas this void ratio is approximately the same for both partial layers, i.e. ranging between 20 and 30, preferably between 25 and 30. It is obvious that in order to obtain, even approximately, the same void ratio in both partial layers, the formulation of the size distribution must be selected accordingly for each of the partial layers.

As regards the upper partial layer, the size distribution used ranges from 0/4 to 0/10. Advantageously, the size grading composition for a 0/10 size distribution is as follows:

25

smalls	0/2	2/4	4/6	6/10
3 – 11 %	0 – 30 %	10 – 60 %	5 – 25 %	20 – 40 %

Such a formulation enables to obtain for the upper layer, with the modified bitumen as a recommended binder, and with a 4 cm layer thickness, a permeability or percolation rate of approx. 3.9 cm/s.

A draining partial upper layer made of coated materials without any sands, with size distribution of for example 2/4 to 4/6 with an elastomer binder and small surface thickness, between 1.5 and 2 cm, enables to:

- ensure the surface characteristics (binding safety);
- reduce the noise level;
- ensure tyre/carriageway contact;
- strengthen surface roughness and ensure macroroughness.

As regards the lower partial layer, the size distribution used ranges from 0/2 to 0/14. Advantageously, the size grading composition for a 0/14 size distribution is as follows:

smalls	0/2	10/14
0 – 5 %	0 – 5 %	95 – 100 %

Such a formulation enables to obtain for the lower layer, with the recommended binder, i.e. a road quality bitumen, and with a 4 cm layer thickness, a permeability or percolation rate of approx. 3.9 cm/s.

For comparison purposes, the percolation rate through draining upper layer blankets realised before the invention is approx. 1.5 cm/s.

A draining partial lower layer made of coated materials with very high size distribution, for example 10/14 to 14/20 with or without an elastomer binder and a surface thickness between approx. 2.5 and 4 cm, enables to:

- negate the clogging effect of the coated material thanks to its very high drainability, which confers it longer efficiency than the draining coated materials of the standard NFP 98-134 or defined in the engineering notices on company products,
- improve the anti-rutting property of the coated material,
- increase the drainage capacity,
- promote horizontal and vertical circulation of water.

The invention also concerns a draining hot bituminous coated material intended for making up a blanket comprising aggregate and a bituminous binder modified by polymers in the sense of this invention.

Its main advantages are described above:

The bituminous coated material of the invention may exhibit any of the following technical characteristics, individually or in combination:

- the modified bituminous binder is a pure bitumen modified by a styrene-butadiene-styrene (SBS) copolymer;
- the modified bituminous binder may be of different composition according to the partial layer of the blanket,
- the recommended binder content depends on the granular class used, the possible addition of filler and the mineralogical nature of aggregate,
- the content of modified bituminous binder is equal to or greater than 3% in weight,
- the aggregate is of monograngular type without any smalls in the lower partial layer,
- the aggregate is of monograngular type without any smalls in the upper partial layer,
- the size distribution of the aggregate complies with one of the following ranges:
 - for the upper partial layer 2/4 – 4/6 – 6/10 or 0/2 – 2/4 – 4/6 – 6/10
 - for the lower partial layer 10/14 – 14/20 – 10 – 20 or 0/2 – 10/14;
- the void ratio is approximately the same for both partial layers;
- the upper partial layer has approximately the same void ratio as the lower partial layer;
- the average volume of the voids (total volume of voids divided by the number of voids) of the upper partial layer is smaller than the average volume of the voids of the lower partial layer;
- filler can be added or not; the addition of filler may prove necessary when manufacturing this coated material, if the content of natural fines of the class(es) used is insufficient. The make-up filler is a filler conventionally used in the formulation of coated materials of calcareous nature and is injected according to a percentage of approx. 1 to 5%;

- mineral or organic additives are used.

The application of a hooking and watertight (suited binder and dosage) layer enables to:

- ensure binding with the support of the layer, and
- obtain surface tightness of the former upper layer blanket.

The invention also relates to a carriageway realised with a bituminous upper layer blanket or coated material as defined previously.

The invention also concerns a method of manufacture of an upper layer blanket as defined above, whereas

- 10 a) binding both partial layers may be provided by an application machine that lays the blanket in a single pass, and
- b) both partial layers may be bonded as well by two passes of the road finishing machine without any chemical binding.

Specific size distribution of the upper partial layer of the blanket ensures 15 mechanic hooking with the lower partial layer by interpenetration of the aggregate elements of the contact surfaces during appropriate compacting.

Each portion of the coated material is compacted by smooth rolling.

The bituminous coated material according to the invention is manufactured in any coating station complying with the production of quality 20 coated materials.

Particular tests, such as the CANTABRO test, which enables to test the weight loss of a sample piece with wear and which enables therefore to put in evidence the cohesion of the coated material, have shown the superiority of the draining coated materials used for the realisation of the upper layer blanket 25 according to the invention with respect to a conventional draining coated material, a regards mechanical handling under traffic.

Indeed, the CANTABRO test that is defined by the Spanish standard NLT-352/86, consists in moulding cylindrical test pieces of approx. 1300 g, then in using them at a selected temperature in a Los Angeles-type rotating drum. 30 Then the weight loss of each test piece is measured after wear. The smaller the loss, the more the coated material is considered as resistant.

Tests carried out respectively at -10°C and at $+18^{\circ}\text{C}$ have produced the following result as regards MASS LOSS:

Test temperature	Thin bituminous concrete	Conventional draining coated material	Draining coated material according to the invention
-10°C	18%	85%	18%
18°C	8%	41%	8%

5 The draining coated material according to the invention has a mass loss identical to that of a thin coated material and a significantly smaller loss than that of a conventional draining coated material.

Other characteristics and not limiting advantages of the invention will appear when reading the embodiment hereunder:

10 - Realisation of the coated material for the lower partial layer with:

- size distribution $10/14 \geq$ at 95%
- addition of filler material through 80μ mesh sieve \geq at 2%
- content of modified binder such as that known under the denomination 'COLFLEX' \geq 3 ppc.

15 - Realisation of the coated material for the upper partial layer with:

- size distribution $4/6 \geq$ at 95%
- addition of filler material through 80μ mesh sieve \geq at 2%
- content of modified binder such as that known under the denomination 'COLFLEX' \geq 4 ppc.

20 The temperature of realisation and of application remains similar to that of the monolithic draining coated materials with elastomer binders. It is equal to or greater than 135°C .

CLAIMS

1. A bituminous upper layer draining blanket comprising two partially superposed layers whereof the upper layer contains aggregate with low particle-size distribution and a modified bituminous binder, and whereof the lower layer contains aggregate with high particle-size distribution and a bituminous binder, characterised in that the upper partial layer comprises an added filler material between 2 and 11% in weight.

10 2. A layer according to claim 1, characterised in that the aggregate size distribution ratio of both partial layers is approx. 3:1 to 4:1.

3. A layer according to claim 1 or 2, characterised in that the aggregate size distribution of the upper partial layer is selected among the 2/4, 4/6 and 6/10 ranges.

15 4. A layer according to one of the claims 1 to 3, characterised in that the aggregate size distribution of the lower partial layer is selected among the 10/14, 10/20 and 14/20 ranges.

5. A layer according to one of the claims 1 to 4, characterised in that both upper and lower partial layers have approximately the same void ratio.

20 6. A layer according to one of the claims 1 to 4, characterised in that both upper and lower partial layers have approximately the same void ratio and in that the average volume of the voids of the upper partial layer is smaller than the average volume of the voids of the lower partial layer.

7. A carriageway comprising a draining bituminous upper layer blanket, characterised in that the upper layer blanket complies with any of the claims 1 to 6.

25 8. A method of realisation of a draining bituminous upper layer blanket according to any of the claims 1 to 6, characterised in that the upper and lower partial layers are applied in a single pass by a road finishing machine.

30 9. A method of realisation of a draining bituminous upper layer blanket according to any of the claims 1 to 6, characterised in that the upper and lower partial layers are applied in two successive passes by a road finishing machine.

330

Declaration and Power of Attorney For Utility or Design Patent Application

Déclaration pour Demandes de Brevet d'Utilité et de Modèle avec Pouvoirs

French Language Declaration

En tant qu'inventeur nommé ci-après, Je déclare par le présent acte que:

Mon domicile, mon adresse postale et ma nationalité sont ceux figurant ci-dessous à côté de mon nom.

Je crois être le premier inventeur original et unique (si un seul nom est mentionné ci-dessous), ou l'un des premiers co-inventeurs originaux (si plusieurs noms sont mentionnés ci-dessous) de l'objet revendiqué, pour lequel une demande de brevet a été déposée concernant l'invention intitulée

COUCHE DE ROULEMENT BITUMINEUSE DRAINANTE

et dont la description est fournie ci-jointe à moins que la case suivante n'ait été cochée:

a été déposée 15 février 2000
 sous le numéro de demande des Etats-Unis _____
 et modifiée le _____ (le cas échéant)
 ou,

le numéro de demande internationale PCT PCT/FR00/00374
 et modifiée le _____ (le cas échéant).

Je déclare par le présent acte avoir passé en revue et compris le contenu de la description ci-dessus, revendications comprises, telles que modifiées par toute modification dont il aura été fait référence ci-dessus.

Je reconnaiss devoir divulguer toute information pertinente à la brevetabilité, comme défini dans le Titre 37, § 1.56 du Code fédéral des réglementations.

Je revendique par le présent acte avoir la priorité étrangère, en vertu du Titre 35, §119(a)-(d) ou §365(b) du Code des Etats-Unis, sur toute demande étrangère de brevet ou certificat d'inventeur ou, en vertu du Titre 35, §365(a) du même Code, sur toute demande internationale PCT désignant au moins un pays autre que les Etats-Unis et figurant ci-dessous. J'ai aussi indiqué ci-dessous, en cochant la case "Non", toute demande étrangère de brevet, tout certificat d'inventeur ou toute demande internationale PCT ayant une date de dépôt précédant celle de la demande à propos de laquelle une priorité est revendiquée.

Prior foreign applications
Demandes antérieures étrangères

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

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the specification of which is attached hereto unless the following box is checked:

was filed on February 15, 2000 as United States Application Number _____ and was amended on _____ (if applicable) or,

PCT International Application Number PCT/FR00/00374 and was amended on _____ (if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, § 1.56.

I hereby claim foreign priority under Title 35, United States Code §119 (a-d) or §365(b) of any foreign application(s) for patent or inventor's certificate, or §365(a) of any PCT international application which designated at least one country other than the United States, listed below. I have also identified below, by checking the "No" box, any foreign application for patent or inventor's certificate, or of any PCT international application having a filing date before that of the application on which priority is claimed:

			Priority claimed Priorité revendiquée
99/01789 (Number) (Numéro)	France (Country) (Pays)	15/February/1999 (Day/Month/Year Filed) (Jour/Mois/Année de dépôt)	<input checked="" type="checkbox"/> <input type="checkbox"/> Yes No Oui Non
 (Number) (Numéro)	 (Country) (Pays)	 (Day/Month/Year Filed) (Jour/Mois/Année de dépôt)	<input type="checkbox"/> <input checked="" type="checkbox"/> Yes No Oui Non

D'autres demandes étrangères sont énumérées sur la feuille de priorité supplémentaire ci-jointe.

Additional foreign application numbers are listed on a supplemental priority sheet attached hereto.

TSV

French Language Utility or Design Patent Application Declaration

Je revendique par le présent acte tout bénéfice, en vertu du Titre 35, §119(e) du Code des États-Unis, de toute demande de brevet provisoire effectuée aux Etats-Unis et figurant ci-dessous.

(Application No.)
(No. de la demande)

(Application No.)
(No. de la demande)

(Application No.)
(No. de la demande)

D'autres demandes provisoires sont énumérées sur la feuille de priorité supplémentaire ci-jointe.

Je revendique par le présent acte tout bénéfice, en vertu du Titre 35, §120 du Code des Etats-Unis, de toute demande de brevet effectuée aux Etats-Unis, ou en vertu du Titre 35, §365 (c) du même Code, de toute demande internationale PCT désignant les Etats-Unis et figurant ci-dessous et, dans la mesure où l'objet de chacune des revendications de cette demande de brevet n'est pas divulgué dans la demande antérieure américaine ou internationale PCT, en vertu des dispositions du premier paragraphe du Titre 35, §112 du Code des Etats-Unis, je reconnais devoir divulguer toute information pertinente à la brevetabilité, comme défini dans le Titre 37, §1.56 du Code fédéral des réglementations, dont j'ai pu disposer entre la date de dépôt de la demande antérieure et la date de dépôt de la demande nationale ou internationale PCT de la présente demande:

(Application No.)
(No. de la demande)

(Day/Month/Year Filed)
(Jour/Mois/Année de dépôt)

(Application No.)
(No. de la demande)

(Day/Month/Year Filed)
(Jour/Mois/Année de dépôt)

D'autres demandes américaines ou internationales sont énumérées sur la feuille de priorité supplémentaire ci-jointe.

Je déclare par le présent acte que toute déclaration ci-incluse est, à ma connaissance, vérifique et que toute déclaration formulée à partir de renseignements ou de suppositions est tenue pour vérifiable; et de plus, que toutes ces déclarations ont été formulées en sachant que toute fausse déclaration volontaire ou son équivalent est passible d'une amende ou d'une incarcération, ou des deux, en vertu de la Section 1001 du Titre 18 du Code des Etats-Unis, et que de telles déclarations volontairement fausses risquent de compromettre la validité de la demande de brevet ou du brevet délivré à partir de celle-ci.

Le(s) soussigné(s) autorise(nt) par la présente le(s) avocat(s) américain(s) ou le(s) mandataire(s) ci-après désigné(s) à accepter et à suivre les instructions, soit de son(leurs) conseil(s) en brevet étranger(s), soit du représentant officiel de la société, concernant toute démarche nécessaire à effectuer auprès de l'Office américain des Brevets et des Marques concernant cette demande, sans communication directe entre le(s) avocat(s) américain(s) ou le(s) mandataire(s) nommé(s) par la présente sera(ont) informé(s) par le(s) soussigné(s). Dans l'hypothèse d'un changement dans les donneurs d'instructions, le(s) avocat(s) américain(s) ou le(s) mandataire(s) nommé(s) par la présente sera(ont) informé(s) par le(s) soussigné(s).

I hereby claim the benefit under Title 35, United States Code §119(e) of any United States provisional application(s) listed below.

(Day/Month/Year Filed)
(Jour/Mois/Année de dépôt)

(Day/Month/Year Filed)
(Jour/Mois/Année de dépôt)

(Day/Month/Year Filed)
(Jour/Mois/Année de dépôt)

Additional provisional application numbers are listed on a supplemental priority sheet attached hereto.

I hereby claim the benefit under Title 35, United States Code §120 of any United States application(s), or §365(c) of any PCT international application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT international application in the manner provided by the first paragraph of Title 35, United States Code §112, I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations §1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application.

(Status)
(Etat)

(patented, pending, abandoned)
(brevetée, pendante, abandonnée)

(Status)
(Etat)

(patented, pending, abandoned)
(brevetée, pendante, abandonnée)

Additional U.S. or international application numbers are listed on a supplemental priority sheet attached hereto.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

The undersigned hereby authorizes the U.S. attorney or agent named herein to accept and follow instructions from either his foreign patent agent or corporate representative, if any, as to any action to be taken in the Patent and Trademark Office regarding this application without direct communication between the U.S. attorney or agent and the undersigned. In the event of a change in the persons from whom instructions may be taken, the U.S. attorney or agent named herein will be so notified by the undersigned.

TS & P

French Language Utility or Design Patent Application Declaration

POUVOIR: En tant qu'inventeur, je désigne l'(les) avocat(s) et/ou l'(les) agent(s) associés au Numéro Client indiqué ci-dessous pour poursuivre la procédure de cette demande et traiter toute affaire la concernant auprès de l'Office des Brevets et des Marques, et autorise à ce que toute correspondance soit associée à ce Numéro Client.

NUMERO CLIENT 7055

Les avocats actuellement désignés sont énumérés ci-après:

Neil F. Greenblum	Reg. No. 28,394
Bruce H. Bernstein	Reg. No. 29,027
James L. Rowland	Reg. No. 32,674
Arnold Turk	Reg. No. 33,094

CUSTOMER NUMBER 7055

The appointed attorneys presently include:

Stephen M. Roylance	Reg. No. 31,296
Leslie J. Paperner	Reg. No. 33,329
William Pieprz	Reg. No. 33,630
William E. Lyddane	Reg. No. 41,568

Address: **Greenblum & Bernstein, P.L.C.**
1941 Roland Clarke Place
Reston, VA 20191

Adresser toute communication téléphonique à:

Direct Telephone Calls to:

Greenblum & Bernstein, P.L.C.
(703) 716-1191

Nom complet du seul ou premier inventeur Jean-Paul MICHAUT	Full name of sole or first inventor Jean-Paul MICHAUT		
Signature de l'inventeur 	Date 30/11/01 	Inventor's signature 	Date 30/11/01 
Domicile Chevreuse, France	Residence Chevreuse, France		
Nationalité France	Citizenship France		
Adresse Postale 2, allée du Bois de l'Yvette, F-78460 Chevreuse, France	Post Office Address 2, allée du Bois de l'Yvette, F-78460 Chevreuse, France		
Nom complet du second co-inventeur, le cas échéant		Full name of second joint inventor, if any	
Signature du second inventeur	Date	Second Inventor's Signature	Date
Domicile		Residence	
Nationalité		Citizenship	
Adresse Postale		Post Office Address	
(Fournir les mêmes renseignements et la signature de tout co-inventeur supplémentaire.)		(Supply similar information and signature for third and subsequent joint inventors.)	